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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/781,411	02/18/2004	Alfredo Li Preti	60,137-245	3061

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EXAMINER	
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ART UNIT	**PAPER NUMBER**
1791	

MAIL DATE	DELIVERY MODE
12/13/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/781,411	LI PRETI ET AL.	
	Examiner	Art Unit	
	Emmanuel S. Luk	1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 October 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10,15-18,20 and 22-27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10,15-18,20 and 22-27* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 1, 2, 6-9, 18, 20, and 22-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schluter (3975128) in view of Nennecker (5498151).

Schluter teaches a mold valve chamber (20) having an output port (17) on the first axis (Fig. 1) with a mold valve piston (16) and air introduction system (25,34), an injection chamber (1) on a second axis (Fig. 1), an injection piston (3) that is movable in the injection chamber (A), and **clearly** defines a portion of the mold valve chamber inner perimeter (Figures 2 through 4, emphasis on Figure 4). The blower (25) can be operated to inject air into the chamber and thus into the mold, therefore it is selectively operated AND is capable of injecting air into the chamber.

Schluter fails to teach an arcuate portion at the end segment of the injection piston.

Nennecker teaches the concept of an arcuate end portion 32 at the end of a piston 26. The substantially circular cross-section 25 of the chamber 26 and the arcuate portion defines a portion that is substantially cross-sectional.

Schluter already teaches an injection piston that moves into position with the mold valve chamber and to come into close arrangement at the junction for forming the same substantial cross-section as the rest of the mold valve chamber. Nennecker also teaches this concept with an arcuate end portion that engages a substantially circular cross-section. It would have been obvious for one of ordinary skill in the art to modify the apparatus of Schluter with a circular mold valve chamber and an arcuate end portion of the injection piston as taught by Nennecker the mold valve chamber of Schluter need not change cross-section from a circular cross section to a half circle due to a flat piston end face in an attempt to have a closed off cross section at the junction between the mold valve chamber and injection valve chamber.

In regards to claims 26 and 27, that the injection piston is less than the diameter of the mold valve chamber is obvious to one of ordinary skill in the art since the piston has to be movable down the chamber and it therefore has to be of a lesser diameter to be able to move down the chamber. Having the same diameter would cause abrasion and cause wear on the apparatus, however, having of a lesser diameter would cause less abrasion and thereby allow for movement and it can be of a diameter that would

still prevent material from flowing in between the diameters of the piston and the chamber.

4. Claims 3-5, 10, and 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schluter (3975128) in view of Nennecker as applied to claims 1, 2, 6-9, 18, 20, and 22-25, and in view of Walker (3655208) and Jepsen (3373999).

Schluter, in view of Nennecker, fails to teach the piston configuration.

Walker teaches metal pistons (16) (Col. 1, lines 5-11) having a piston ring (26; seal ring). The seal ring being made from a nonmetallic material (Teflon, Col. 1, lines 9 and 10; Col. 3, line 40) and being surrounded by two portions ("sandwiched") (See Figures 1 and 2). The seal ring will provide an 'interference fit' within the inner perimeter of the chamber. The ring is easy to maintain and economically construct for a nonmetallic material by Walker with minimum waster material (Col. 2, lines 18-20)

Jepsen also teaches pistons and piston ring designs in which a seal ring (24) is sandwiched between two piston sections (18, 16), the ring material can be polyimide resin, epoxy, Teflon, phonlic resins, nylon, carbon-graphite compositions (Col. 3, lines 49-53)

It would have been obvious one of ordinary skill in the art to modify Schluter, as modified by Nennecker, with the nonmetallic portion between two metallic portions as taught by Walker, or Jepsen, because it provides a seal for the piston to prevent leakage.

In regards to claim 10, the claim does not teach a structural limitation and merely states the air injection system communicating in response to a position of a mold valve piston. The limitation provided is akin to a process of using the apparatus in response to a condition and provides no structural limitation.

In regards to 4 and 5, Schluter shows a mold valve piston in the extended position (Fig. 1), the passage of the air inlet is blocked by the mold valve piston. Thereby, Schluter teaches a mold valve piston that is selectively movable to block the air inlet.

In regards to the arcuate segment, Schluter clearly teaches defining the a portion of the mold valve chamber and thereby it would have been obvious for one of ordinary skill in the art to modify the injection piston end to conform to the shape of the mold valve chamber and respective piston to thereby allow for a shape that will conform to the rest of the interior surface because it would allow for movement of the mold valve piston through the chamber without interference.

Response to Arguments

5. Applicant's arguments filed 9/14/07 have been fully considered but they are not persuasive. The applicants argue that the combination of Schluter with Nennecker is not obvious and notes the applicant's request for further clarification. The Schluter reference teaches the claimed apparatus as shown above in the rejection. Schluter teaches the concept of the chambers and respective pistons and that the injection piston would form a portion of the mold valve chamber, as seen in the figures. That the

piston would be flat is the shape of the mold valve chamber, yet it also shows that it piston would form the perimeter of the chamber and that it would be flush with the shape of the mold valve chamber piston thereby allowing for the material to be fully pushed from the chamber. The Nennecker reference teaches the use of an arcuate portion on a piston that would conform and form the perimeter of the chamber thereby keeping with the shape/cross section of the chamber. One of ordinary skill in the art would find both these references in the injection arts and would have been understood the concepts of the piston that forms a portion of the perimeter of the chamber that it would intersect. Thus, as shown in the above rejection, Schluter is modified with the shape of the mold valve chamber and piston being shaped similar to the chamber and piston design taught by Nennecker. This piston design is beneficial since it would lessen the need for specialized shapes in the mold valve chamber and piston design and instead be of the standard tubular design that can be machined by drills, thereby reducing costs for construction of the apparatus.

Examiner agrees that there are positive claim limitations in regards to the gas injection system such as the gas source, but claim 10 still merely state process limitations that do not provide structural limitations to the apparatus. However, claim 10 discusses that the gas injection system communicates with the mold valve chamber in response to a position of a mold valve position movable within the mold valve chamber, this is a process of use limitation. That the gas injection system is communicates with the mold valve chamber in claim 10 merely reiterates the same claimed feature in independent parent claim 6.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Emmanuel S. Luk whose telephone number is (571) 272-1134. The examiner can normally be reached on Monday-Fridays from 9 to 5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Yogendra N. Gupta can be reached on (571) 272-1316. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

EL

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